

Milestone Report

for Upland Source Control at the Portland Harbor Superfund Site

December 2006

Prepared by the Oregon Department of Environmental Quality
as required by the 2005 Portland Harbor Joint Source Control Strategy



State of Oregon
Department of
Environmental
Quality

This document is posted on DEQ's web page at
<http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/jointsource.htm>.

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Table 1. Controlling Confirmed or Suspected Upland Sources of Contamination to
Portland Harbor

Table 2. Status of High Priority Sites

1.0 Introduction

On December 1, 2000, a section of the lower Willamette River within the City of Portland, the Portland Harbor, was added to the Superfund National Priority List (NPL). In February 2001, the Oregon Department of Environmental Quality (DEQ), United States Environmental Protection Agency (EPA), and other governmental parties¹ signed a Memorandum of Understanding (MOU) that provided a framework for cooperation in the investigation and cleanup of the Portland Harbor Superfund Site to optimize federal, state, tribal and trustee expertise and available resources.

Under the 2001 MOU, EPA was designated as the lead agency for investigating and cleaning up “in-water” contamination in the Harbor, or contamination in the river water and underlying sediment, using federal Superfund authorities. DEQ, using state cleanup authority, was designated as the lead agency for identifying and controlling “upland” sources of contamination, or those sources of pollution adjacent to or near the river that may be contaminating river water or sediments. To coordinate in-water cleanup and upland source control work, the MOU directed DEQ and EPA to jointly develop a source control strategy that defines a process for identifying and controlling potential sources of contamination threatening the river.

DEQ and EPA finalized the Portland Harbor Joint Source Control Strategy (JSCS) in December 2005². The overarching goal of the JSCS is to identify, evaluate and control sources of contamination that may affect the Willamette River in a manner that is consistent with the objectives and schedule for the Portland Harbor remedial investigation and feasibility study (RI/FS). Timely upland source control is necessary to allow cleanup of the river to proceed without risk of significant recontamination. DEQ is currently implementing the JSCS in the Portland Harbor Superfund Site study area – approximately River Mile 2 to River Mile 11³.

The JSCS requires DEQ to prepare a Milestone Report on a quarterly basis that summarizes the status of DEQ’s upland source control work. The report submittal schedule has been changed to bi-yearly. This is the third Milestone Report; the first report was prepared in March 2006 and the second report was prepared in June 2006. Milestone Reports are submitted to EPA, and provide the basis for potential meetings with EPA and our government partners to discuss site prioritization and source control progress. These reports also serve as documentation of progress on river-wide source control within Portland Harbor.

¹ The signatory partners to the MOU include the EPA, DEQ, Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, Nez Perce Tribe, National Oceanic and Atmospheric Administration, Oregon Department of Fish and Wildlife, and U.S. Department of the Interior.

² The JSCS is available on DEQ’s web site at <http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/jointsource.htm>; click “Joint Source Control Strategy” on the left side bar.

³ “River Mile” indicates the distance from the Willamette River’s confluence with the Columbia River (i.e., River Mile 11 is 11 miles upstream of the confluence).

1.1 Organization of the Milestone Report

The Milestone Report is organized as follows.

- Section 2.0: Identifying Potential Sources of Contamination in Portland Harbor – This section describes DEQ’s work to identify potential sources of contamination to the Willamette River in Portland Harbor, including site discovery and site assessment activities.
- Section 3.0: Evaluating Potential Sources of Contamination to the River – This section describes DEQ’s evaluation of all confirmed or suspected upland sources of contamination to Portland Harbor, as summarized in Table 1.
- Section 4.0: Taking Measures to Control Sources and Making Source Control Decisions – This section describes the source control measures used at upland sites in Portland Harbor and the process for making source control decisions, including coordination with EPA and our government partners, and public involvement opportunities. Source control measures and decisions are summarized in Table 1.
- Section 5.0: Status of Ongoing and Completed Source Control Measures – This section describes the information presented in Table 1 that summarizes the status of ongoing and completed source control measures. This section also describes the specific status of the 17 High Priority and Preliminary High Priority sites (Table 2). This section also presents five specific source control goals designed to help DEQ focus our efforts to achieve the overarching goal of source control.
- Section 6.0: Issues Encountered in Source Control Work – This section describes issues affecting DEQ’s ability to conduct source control work and proposes ways to resolve issues as well as a desired timeframe for resolution.
- Section 7.0: Summary – This section summarizes the overall status of source control work in Portland Harbor, highlighting accomplishments, key issues and next steps for moving forward.
- Section 8.0: Obtaining Additional Information on Upland Source Control Work – This section indicates where additional information can be found on the status of source control work at upland sites in Portland Harbor.
- Section 9.0: Information on Table 1: Controlling Confirmed or Suspected Upland Sources of Contamination to Portland Harbor – This section provides helpful information for interpreting Table 1, including definition of key terms and acronyms used.

2.0 Identifying Potential Sources of Contamination in Portland Harbor

DEQ’s strategy for identifying and investigating potential sources of contamination to Portland Harbor prior to the December 2000 Superfund Site listing was described in the March 2006 Milestone Report. Those site identification and investigation activities were initially focused on a six-mile stretch of the lower Willamette River (now known as the Initial Study Area) extending from the southern tip of Sauvie Island upstream to Swan Island, from approximately River Mile

3.5 to River Mile 9.2. For more information, please see the March 2006 Milestone Report at www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/jointsource.htm.

2.1 Recent Site Discovery and Site Assessment activities

As the Portland Harbor study area has grown to include a nine mile stretch of the lower Willamette River extending from River Mile 2 to River Mile 11, DEQ's site discovery and site assessment efforts have expanded with it. Recently, much of DEQ's site discovery and site assessment work has focused on identifying potential sources of contamination threatening the river through stormwater that is piped to the river from surrounding upland areas. DEQ is working closely with the City of Portland to identify upland sources contributing contamination via both the City's municipal stormwater system and private stormwater systems. Evaluating and controlling stormwater inputs to the Harbor will continue to be a focus for DEQ in the years to come.

3.0 Evaluating Potential Sources of Contamination to the River

DEQ is investigating or directing source control work at over 60 upland sites in Portland Harbor. Preliminary investigation activities at these sites are designed to determine whether the site is a potential or ongoing source of contamination to the river. These investigations, or "source control evaluations," consider all potential, current and historic contaminant sources and pathways for the contaminants to migrate to the river. Potential pathways include:

- Direct discharges – Pollutants from commercial, industrial, private or municipal outfalls are being discharged directly to the Portland Harbor Superfund Site. Many of these discharges are permitted under the Clean Water Act National Pollutant Discharge Elimination System (NPDES). Permitted discharges include industrial wastes, stormwater runoff, and combined sewer overflows (CSOs)⁶.
- Groundwater – Contaminated groundwater may enter the river directly via discharge through sediments, bank seeps, or it may infiltrate into storm drains/pipes, ditches or creeks that discharge to the river. Contaminant migration may occur as non-aqueous phase liquids (NAPLs) or as chemicals dissolved in the groundwater itself.
- Stormwater – Contaminants may be carried to the river by water that runs off a site into storm drains after it rains, delivered to the river by stormwater pipes (including permitted and unpermitted stormwater discharges).

⁶ CSO events are untreated discharges of combined storm water, sanitary sewage from residential, commercial, and industrial sources that overflow from the sewer system into the river during heavy rainfall periods when the amount of stormwater and sewage exceeds the capacity of the collection system.

- Overland transport/sheet flow – The uncontrolled flow of water from a site to the river and the transport of other materials from a site may deliver contaminants to the river.
- Bank erosion/leaching – River bank soil, contaminated fill, waste piles, landfills and surface impoundments may release contaminants directly to the river through erosion, via soil erosion to stormwater, or by leaching to groundwater.
- Overwater activities – Contaminants from overwater activities (e.g., sandblasting, painting, unloading, maintenance, repair and operations) at riverside docks, wharves, or piers; discharges from vessels (e.g., gray, bulge, ballast waters); full releases; and spills may affect the river.

These potential contaminant migration pathways are evaluated for each site and upland contaminant concentrations are screened against conservative screening level values (SLVs) protective of human health and the environment. Sites that are identified as current or potential sources of pollution to the river are characterized and prioritized. Based on the resulting priority, either further source control evaluation is completed or source control measures are initiated.

Table 1 provides a summary of confirmed and suspected upland sources of contamination to the river that DEQ is either actively working on or has finished source control work on by issuing a final source control decision. Table 1 also provides the basis for the determination that a site is a source of contamination to the river, the status of and schedule for source control evaluation, and the priority of the site for source control. The table includes the priority of each contaminant migration pathway for each site, as well as the overall priority of the site based on the pathway priorities.

High priority sites are identified in the table based on existing site information, and subsequent Milestone Reports will identify any new high priority sites as new information becomes available. Source control is expected to move forward at high priority sites without delay.

4.0 Taking Measures to Control Sources and Making Source Control Decisions

DEQ determines the need for source control measures at each upland site, in consultation with EPA, based on the completeness of contaminant migration pathways, exceedances of SLV, and other factors as appropriate. See p. 3-1 through 3-6 of the JSCS for more information about SLVs, and p. 4-1 through 4-8 of the JSCS for more information about the source control decision process.

4.1 Types of source control measures

Upland source control is an iterative process, where early steps may be revisited and conclusions refined by information gathered later in the process. A combination of tools may be used to control a source, including but not limited to the following.

- Technical assistance – Technical assistance, often provided during inspections, provides technical information designed to help individual businesses bring their facilities into

compliance with environmental regulations. DEQ's Hazardous Waste Program is actively providing technical assistance to facilities within the Portland Harbor Superfund Site area.

- Cleaning up contaminated upland areas – Cleanup work addresses contaminated soil, groundwater, stormwater and other sources and focuses on reducing or eliminating contaminant migration to the river. Common source control measures include removing highly contaminated soil areas, stabilizing or capping contaminated bank areas, treating or containing contaminated groundwater, and extracting contaminated sediment from storm sewer systems. Source control measures vary from site to site.
- Source control of active discharges – Tools to control active discharges include best management practices, industrial process changes, pollution prevention practices, and technology-based effluent controls. Compliance is achieved voluntarily or through administrative actions, including permits or enforcement.
- Source control of stormwater – Stormwater source control is complex because storm drain systems capture discharges from many different sources (e.g., land use activities, runoff from contaminated sites, and infiltration of contaminated groundwater into the storm drain system). It is also complex because stormwater regulation may involve federal, state and local agencies. Because of this complexity, all of the tools described above are useful for stormwater source control and will be used as appropriate.
- Administrative actions and enforcement – Administrative actions include licenses, permits, deed restrictions, requirements for site development plans, and enforcement actions, which may be necessary when administrative actions are violated. Agencies rarely take enforcement actions without first conducting an inspection and documenting findings, requested changes, warnings and offers of technical assistance. When enforcement actions are warranted, they are usually taken in escalating order, starting with notices of violation, moving to enforcement or compliance orders requiring specific changes by a set date, and ending with monetary penalties, court action or DEQ's takeover of investigation or cleanup work. Formal cleanup actions performed under an order or decree use oversight and enforcement to ensure that appropriate actions are taken in a timely manner.

Table 1 summarizes source control decisions conducted at upland sites, the basis for the determination that upland source control measures are necessary, a summary of the selected source control measure(s), and a schedule for implementing the source control measure(s).

4.2 DEQ coordination with EPA and partners on source control decisions

As the lead agency for identifying and controlling sources of upland contamination threatening the river in Portland Harbor, DEQ coordinates with EPA and our government partners on source control work. This includes documenting, tracking and coordinating source control efforts as described in Sections 2.5 and 7 of the JSCS.

DEQ will provide EPA and our partners with an opportunity to review source control decisions prior to being finalized. These decisions typically fall into the following three categories.

- DEQ determined that a site is not a current or future source of contaminants to Portland Harbor and that no source control measures are required.

- DEQ selected the source control measures for a site.
- DEQ concluded that source control at a site is complete, or in the case of systems that require operation and maintenance (e.g., hydraulic containment), that the source control action is effective.

DEQ will inform EPA and our partners of pending source control decisions and the schedule for review, and will provide copies of source control decision documentation to EPA and partners upon request. EPA and partners will have 30 days to provide comments to DEQ on source control decisions.

In addition to this regular review and comment process, some upland sites in Portland Harbor may warrant closer coordination between DEQ, EPA and our partners for source control (e.g., the Gasco site and potential source control measures for the chlorinated solvent groundwater plume at the Siltronic site). In these instances, DEQ and EPA source control coordinators will develop a project-specific coordination strategy.

4.3 Public involvement in source control decisions

DEQ Cleanup Program statutes and rules require that a public notice and comment opportunity be provided prior to DEQ's selection of a final site cleanup remedy and before DEQ determines that the cleanup is complete. For upland Portland Harbor cleanup projects, this means that DEQ issues a public notice and seeks public comments on the recommended final site cleanup strategy. Once public input is considered, DEQ's final decision is documented in a Record of Decision (ROD) for the site. For most sites, the upland DEQ ROD includes elements that address both source control for Portland Harbor and cleanup actions specific to areas of upland contamination that are not related to pollution in the Harbor.

Many of the source control measures implemented at upland sites are conducted prior to the selection of the final upland site remedy. While public notice and comment is not required for these "interim" removal actions under DEQ statutes and rules, DEQ typically issues a public notice and seeks public comments when the action is likely to be a substantive piece of the final site remedy, or as the DEQ project manager determines is appropriate.

DEQ does not typically seek public comments for small-scale interim source control measures and time critical actions. Project managers will, however, issue notices as appropriate to let the public know that the activity is being conducted.

5.0 Status of Ongoing and Completed Source Control Measures

Table 1 summarizes the status of ongoing source control measures (SCMs), including SCM activities completed to date, proposed SCM activities, and a target schedule for completion. To the extent practicable, DEQ has collected information and/or made estimates of the mass or volume of contaminants removed, contained, treated or otherwise controlled, to help demonstrate the progress of source control activities.

Table 1 also summarizes completed SCMs and provides the date that the SCM was completed, the date of EPA review and comment, and any operation and maintenance requirements associated with the SCM.

As of December 2006, the DEQ categorized 72 sites (see Table 1) into the following source control categories:

- High Priority Sites**- 8
- Preliminary High Priority Sites**- 9
- Medium Priority Sites**- 7
- Low Priority Sites**- 5
- Priority To Be Determined Sites**- 27
- Sites with Source Control Decisions**- 16

The status of High Priority and Preliminary High Priority sites is presented in Table 2. Ten of the 17 High Priority sites currently have SCMs in place.

New to this December 2006 Milestone Report, DEQ developed five specific goals for our source control efforts. These goals will help DEQ focus our source control efforts to achieve the overarching goal of source control: to identify, evaluate and control sources of contamination that may affect the Willamette River in a manner that is consistent with the objectives and schedule for the Portland Harbor RI/FS.

Goals and Status for High Priority Sites

Goal 1- Source Control Evaluation (SCE) completed at all High Priority sites by 1/1/08.

Goal 1 Status as of 12/06

- 5 of 17 SCEs completed
- 9 of 17 SCEs to be completed in 2007
- 2 of 17 SCEs to be completed in 2008 (Rhone Poulenc & City Outfall RI/FS)
- 1 of 17 sites is EPA lead (Gould)

Goal 2- SCM selected at all High Priority sites by 7/1/08.

Goal 2 Status as of 12/06

- SCMs have been selected and have been implemented at 4 of 17 sites and interim SCMs are in-place at an additional six other High Priority sites

Goal 3- SCM constructed and effectively operating at all High Priority sites by 1/1/10.

Goal 3 Status as of 12/06

- 2 of 17 sites have effective SCMs operating (Time Oil and Terminal 4- Slip 3)

Goals and Status for Medium and Low Priority Sites

Goal 4- SCE completed at all Medium and Low Priority sites by 1/1/09

Goal 4 Status as of 12/06

- None of 12 sites have completed SCEs, but all are on schedule to be completed by the end of 2008

Goals and Status for Priority “To Be Determined (TBD)” Sites

Goal 5- Completed prioritization at all TBD sites by 1/1/08.

Goal 5 Status as of 12/06

- None of the 27 sites have been prioritized for all pathways, but 18 of the 27 are scheduled to be completed in 2007.
- 2 of the 27 sites are EPA lead sites.

6.0 Issues Encountered in Source Control Work

This section summarizes issues affecting DEQ's ability to make source control decisions or completeness of determinations for any step of the source control process. This section also presents DEQ's proposed ways to resolve the issues and a desired timeframe for resolution.

Issue 1: Moving certain projects through the source control process

For a number of reasons, certain DEQ Portland Harbor cleanup projects are not proceeding through the source control process at an acceptable pace. Source control activities at these sites need to be accelerated in order to identify, evaluate and control upland contaminant sources before the Portland Harbor Record of Decision (ROD).

To resolve this issue, DEQ first identified these sites and then worked to accelerate their schedules for source control efforts. DEQ identified following sites in the March 2006 Milestone Report, and these sites remain a high priority for accelerated source control. Below is a summary of the status of each site.

- **Premier Edible Oil (PEO)**

Problem: Schnitzer Investment Corp (SIC) is the owner and responsible party of the PEO site. SIC claims that their neighboring site, Time Oil, has contributed to contamination at the PEO site by either former Time Oil operations at the PEO site or by trespass from the Time Oil site adjacent to PEO. SIC has been resistant to move forward with source control work at the PEO site that SIC claims is, at least partially, Time Oil's responsibility.

Path to resolving: DEQ directed SIC to prepare a site characterization/source control evaluation work plan. DEQ is currently reviewing the revised work plan. Once DEQ accepts the work plan, PEO will implement the plan.

Progress made since June 2006 Milestone Report: DEQ reviewed the draft site characterization source control evaluation work plan and met with SIC to discuss project status and future actions.

- **Crawford Street**

Problem: Crawford Street completed a limited removal of black sands (sand blast grit) in 2001 from a portion of their beach and at the top of the bank (which was the source of the black sands in the beach). Crawford Street also completed a groundwater investigation. Crawford Street needs to complete their source control evaluation by investigating the stormwater pathway at the site.

Path to resolving: DEQ directed Crawford Street to complete a stormwater evaluation in the 2006/2007 water year.

Progress made since June 2006 Milestone Report: Crawford Street will conduct a stormwater screening per the JSCS in the 2006-2007 water year.

- **Schnitzer Burgard**

Problem: The responsible party (RP) implemented a number of stormwater upgrades and best management practices over the last several years, but site characterization/source control evaluation needs to be completed. Schnitzer submitted a draft RI report, but the stormwater pathway still needs to be evaluated.

Path to resolving: Schnitzer needs to develop a clear path for completing the site characterization/source control evaluation, and then implement that plan.

Progress made since June 2006 Milestone Report: DEQ conducted a site inspection earlier this year. Schnitzer submitted a scoping document for site characterization/source control evaluation focusing on the stormwater pathway. DEQ is reviewing that scoping document.

- **MarCom South**

Problem: Site characterization/source control evaluation in the MarCom South parcel was stalled by the owner/operator entering bankruptcy.

Path to resolving: Property ownership has reverted to the previous owner, which entered into a Cost Recovery Agreement with DEQ to conduct a remedial investigation/source control evaluation at the property.

Progress made since June 2006 Milestone Report: DEQ approved the remedial investigation/source control evaluation work plan and the RP has largely implemented the work plan. Evaluation of the stormwater pathway is the last outstanding work element to be completed.

- **GS Roofing**

Problem: The DEQ project manager overseeing work at GS Roofing left DEQ earlier this year, and the vacant position had not been filled due to agency budget constraints. This has affected the progress of source control work at the site.

Path to Resolving: DEQ made GS Roofing site a priority for staffing and accelerated source control work. GS Roofing conducted independent investigations of the facility. The next step in the project is for DEQ to review this information and provide direction regarding what additional work is required and a schedule for this work.

Progress made since June 2006 Milestone Report: DEQ recently assigned a new project team to the GS Roofing site. DEQ completed the review of available site information and is scheduled to provide written comments to GS Roofing in early 2007.

Issue 2: Completing source control at the Gasco site

NW Natural's Gasco site is a high priority site for upland source control. The distribution and magnitude of upland contamination at the Gasco site is extensive and very significant. DEQ directed NW Natural to collect data to support the selection, design, installation and operation of source control measures, rather than conducting further source control evaluation. NW Natural and DEQ agreed to a schedule for a phased approach to design and implementation of source control measures by 2008. NW Natural is currently moving forward with work that will support source control planning along the shoreline of the Gasco and Siltronic Corporation properties, including the following:

- A pilot study to evaluate groundwater hydraulic containment/control and treatment; and

- A near-shore drilling and sampling program that will provide information regarding the depth of contaminated groundwater and a preliminary assessment of subsurface conditions for a potential vertical barrier.

Issue 3: DEQ staff resource limitations

Limited staff resources continue to affect DEQ's ability to conduct and complete source control work in Portland Harbor. The size of DEQ's Cleanup Program was reduced earlier this year due to budget constraints, and with that reduction, DEQ lost several staff working on Portland Harbor. It is unlikely that DEQ's Portland Harbor staffing levels will be significantly increased in the near future.

DEQ is continually looking at staff work load and developing priorities to address the most important work. DEQ will continue Portland Harbor source control efforts focusing on the most significant and potentially significant upland sources, and explore opportunities to increase staffing levels when possible.

Issue 4: Stormwater investigations and site discovery efforts

The City of Portland is investigating contamination and source control options (i.e., conducting an RI/FS) for the City's municipal stormwater conveyance system in Portland Harbor under DEQ oversight. The purpose of the work is to determine whether discharges from the City's outfalls are a significant source of Portland Harbor contamination. DEQ is working closely with the City to identify upland sites that may be contributing contamination to the stormwater outfalls. A number of new upland sites may be identified in this process, and limited staff resources may affect DEQ's ability to evaluate these new sites.

DEQ will continue to prioritize source control work based on the most significant and potentially significant sources, including upland sites contributing stormwater to the City's conveyance system.

Issue 5: Stormwater evaluation and control

Stormwater has been the most challenging Portland Harbor contaminant migration pathway for DEQ to evaluate and control because of the many sources contributing to stormwater systems, the temporal variation in stormwater, and the complexity of stormwater regulations. For these reasons, stormwater evaluation and control has generally lagged behind other contaminant migration pathways (i.e., soil and groundwater pathways) in Portland Harbor source control efforts.

Considerable progress has been made on this front over the past six months. DEQ committed to work with Portland Harbor RPs to implement JSCS screening evaluations at as many sites as possible during the 2006-2007 water year. DEQ launched this effort with a blanket mailing to RPs in June 2006. The letter described the agency's intent and invited RPs to attend one of two workshops in July to learn more about the screening evaluation process. DEQ also developed various guidance documents and provided technical assistance to project managers to help accomplish this objective. DEQ expects that this effort will result in the collection of stormwater data at 20-30 sites during this water year.

Issue 6: Developing a long-term stormwater solution

A long-term solution is needed to control contaminants in stormwater discharges to Portland Harbor to ensure that ongoing stormwater discharges do not recontaminate in-water cleanup remedies.

Resolving this issue will take time. In 2005, DEQ formed a Portland Harbor Stormwater work group composed of staff and managers from DEQ's Cleanup and Water Quality Programs. The purpose of the work group is to address the issue – developing a regulatory method of ensuring that stormwater will not recontaminate sediments after the remedy for Portland Harbor has been implemented. The workgroup met several times during 2006 to explore potential approaches and discuss the legal and technical issues associated with each approach. In June 2006, with the understanding that DEQ and its partners would be undertaking significant work of the upcoming year to better understand the nature and extent of stormwater impacts to the harbor, the work group decided to temporarily suspend its work. The work group felt it had reached a point in its deliberations where it was necessary to better understand the magnitude of stormwater impacts before it could go farther in identifying a long-term solution. It is anticipated that the work group will reinitiate their efforts later in 2007.

7.0 Summary

DEQ is making significant progress in controlling sources of contamination to the lower Willamette River in Portland Harbor, and is coordinating resources of its Cleanup, Hazardous and Solid Waste, Water Quality and Spills Programs to achieve upland source control objectives by the expected time of the Portland Harbor Record of Decision. To date, DEQ has identified more than 70 upland sites that may be potential sources of contaminants in Portland Harbor, and most of these sites have been prioritized for additional investigation or source control. Additionally, DEQ evaluated a number of sites in our site discovery process throughout the Portland Harbor project and concluded these sites do not threaten the river.

As of December 2006, the DEQ categorized 72 sites (see Table 1) into the following source control categories:

High Priority Sites- 8

Preliminary High Priority Sites- 9

Medium Priority Sites- 7

Low Priority Sites- 5

Priority To Be Determined Sites- 27

Sites with Source Control Decisions- 16

In addition, the DEQ Toxic Use/Waste Reduction Assistance Program (TU/WRAP) is providing technical assistance to facilities in the Portland Harbor area that may be discharging contaminants to the river via the City's stormsewer system, encouraging these facilities to reduce their hazardous waste use and pollution releases. DEQ TU/WRAP staff worked with the City of Portland to identify priority areas and facilities, and conducted over 70 technical assistance visits and facility inspections within City outfall basins M-1, 18, 24 and 52. DEQ and the City are currently evaluating the next City outfall basins to focus on in technical assistance and inspection efforts.

DEQ will submit a Milestone Report to EPA twice a year, with the next Milestone Report scheduled for June 2007, and update Table 1 and Table 2 with the current status of source control work at all upland sites. For more information about the Milestone Report or DEQ's source control work generally, please contact Jim Anderson, DEQ Portland Harbor Project Manager, at (503) 229-6825, or anderson.jim@deq.state.or.us.

8.0 Obtaining Additional Information on Upland Source Control Work

For more information on DEQ's source control work at any of the sites listed in Table 1, see DEQ's Portland Harbor web page (<http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/index.htm>) and click on "Upland Sites map" in the right hand corner. This link provides a map showing all Portland Harbor upland sites and summary reports of the status of source control work. Just open the map and click on the site you are interested in to connect to DEQ's Environmental Cleanup Site Information (ESCI) database, which houses current information on work at each site.

Alternatively, contact the DEQ project manager (PM) that is leading work on the site you are interested in. Contact information for each DEQ PM is listed on the last page of this report.

For more information on the status work on the Portland Harbor Superfund Site, see EPA's Portland Harbor web page (<http://yosemite.epa.gov/r10/cleanup.nsf/sites/ptldharbor>).

9.0 Information about Table 1: Controlling Confirmed or Suspected Upland Sources of Contamination to Portland Harbor

The purpose of Table 1, entitled Controlling Confirmed or Suspected Upland Sources of Contamination to Portland Harbor, is to track and share information on the status of DEQ's efforts to evaluate and control sources of pollution to the Willamette River in Portland Harbor. The table provides information on each upland site that DEQ is working on in the Harbor, including the status of evaluations to determine whether source control is needed, the progress of source control measures, and the status of source control decisions and EPA review. Below is some helpful information for interpreting the table, including definitions for key terms and acronyms.

Site Information and Project Status

The first columns of Table 1 provide basic background information on each site, including:

- the name of the site,
- the site's reference number for DEQ's Environmental Cleanup Site Information (ESCI) database,
- the location of the site (river mile and address),
- the DEQ project manager (PM) that is leading source control work,
- the type of agreement DEQ is using to direct cleanup activities at the site (i.e., Intergovernmental Agreement, Portland Harbor Agreement, Unilateral Order, etc.), and

- the status of work occurring at the site (i.e., Preliminary Assessment, Remedial Investigation, completed Source Control Decision, Remedial Design/Remedial Action, etc.).

Sites are listed in Table 1 based on their position alongside the Willamette River, or the “River Mile” associated with their location. The River Mile indicates distance of the site from the Willamette River’s confluence with the Columbia River. Sites associated with a lower river mile occur downstream of sites with a higher river mile.

Sites listed in Table 1 are those in Portland Harbor at which DEQ is actively overseeing upland investigation or source control actions, or for which source control decisions have been made. DEQ updates the site information in ECSI when a Strategy Recommendation is made, but a site is not added to Table 1 until active oversight of the project is provided by DEQ.

Source Control Evaluation

The Source Control Evaluation (SCE) columns in Table 1 provide information on the status of DEQ’s work to evaluate the need for source control measures, including the status of SCE for each potential pathway, the schedule for completing SCE, the basis for determining whether source control measures are needed, and the status of EPA review.

Potential pathways

Six standard pathways represent the major potential pathways that contaminants could follow to reach the river from an upland site. These pathways include:

- overland transport/sheet flow – the uncontrolled flow of water and other material to the river from a site
- back erosion – erosion of material within the sloping bank areas of the site to the river
- groundwater – groundwater plumes or discharges to the river via seeps or through preferential pathways
- stormwater – stormwater discharges to the river that originate from a pipe or stormwater system, including unpermitted stormwater discharges and discharges under a DEQ general stormwater permit
- overwater activities – the storage or use of hazardous substances over the water (i.e., storage tanks on docks, permanent work activities conducted over water), that if released would be a potential current or future source of contamination to the river; pipelines and other conveyance systems are not considered in this category, releases from these types of systems are reported to the Oregon Emergency Response System (OERS) system for clean up
- other – may include permitted wastewater discharges, individually permitted stormwater discharges, air deposition or other pathways

Each of these standard pathways appears for each site in Table 1 to track SCE work on a pathway-specific basis.

Basis for determining the need for source control

DEQ evaluates each of the pathways listed above to determine the need for source control measures. DEQ makes this determination based on: (1) whether contaminants are present and

whether the pathway is capable of carrying them to the river (if it is, the pathway is called “complete”); and if a complete pathway exists, (2) whether it is carrying contaminants to the river at concentrations that exceed the Screening Level Values (SLVs) provided in the Joint Source Control Strategy (JSCS)⁷.

Three general examples are provided below.

- Example 1: Initial investigations of a site that is adjacent to the river indicate that bank soils have the potential to erode into the river and carry contaminants. DEQ oversees a SCE to determine whether contaminants are in fact present in the bank soils and whether the bank soils are carrying or could carry those contaminants into the river. The SCE concludes that contaminants are present in the bank soils and the soils are carrying contaminants into the river; the pathway is deemed “complete.” The SCE then determines whether the bank soils are carrying or could carry contaminants to the river at concentrations that exceed the SLVs in the JSCS. If they are or could carry contaminants to the river at concentrations exceeding SLVs, DEQ determines that source control measures maybe needed and assigns a priority of high or medium to the pathway based on the degree of SLV exceedance (see “Priority levels for each pathway and site” below for more information on the priority levels). If it is a high priority, then the RP should move forward aggressively evaluating, designing, and implementing SCMs. If it is medium priority, then the RP should use the weight-of-evidence approach to determine if further SCE is needed or if SCMs are needed.
- Example 2: Initial investigations of a site adjacent to the river indicate that groundwater has the potential to migrate toward the river and carry contaminants. DEQ oversees a SCE to determine whether contaminants are present in the groundwater and whether the groundwater is carrying or could carry those contaminants into the river. The SCE concludes that groundwater is or could carry contaminants into the river, but only at concentrations significantly below the SLVs listed in the JSCS. DEQ determines that the pathway is “complete,” but no source control actions are needed because SLVs are not exceeded.
- Example 3: Initial investigations of a site near (but not adjacent to) the river indicate that stormwater has the potential to migrate toward the river and carry contaminants. DEQ oversees a SCE to determine whether stormwater is in fact migrating to the river and whether it is or could carry contaminants to the river. The SCE concludes that stormwater is actually not reaching the river and could not reach the river because it is diverted to a stormwater treatment system. DEQ determines that the pathway is “not complete” and no source control actions are needed.

Definition of “Insignificant pathway; no actions recommended”

The term “insignificant pathway; no actions recommended,” is used in Table 1 when (1) the pathway is complete, and (2) contaminant concentrations are below SLVs at a point of compliance (e.g., river bank monitoring wells) and are not anticipated to increase.

Use of “N/A” for the pathways

“N/A” is used in Table 1 to indicate that the particular pathway does not exist at the site. For example, for an upland site that is set back from the river (i.e., not adjacent to the river’s edge)

⁷ See p. 3-1 through 3-6 of the JSCS for more information about SLVs.

N/A would indicate that the overland transport/sheet flow, overwater activities, and bank erosion pathways do not exist at the site. For a site that is adjacent to the river, but where a concrete seawall lines the river bank, N/A would indicate that the pathway bank erosion does not exist at the site.

Priority levels for each pathway and site

Each pathway evaluated at each site is given a priority level for source control upon completion of the SCE, or when adequate information exists to determine the pathway's priority. Pathways are prioritized based on their ability to carry contaminants from upland areas to the river at concentrations that exceed SLVs. Each site is then given a priority level based on the highest priority of the pathways. For example, if a site has two low priority pathways and one high priority pathway, the site is determined to be a high priority for source control. Definitions for high, medium and low priority determinations follow.


- High – High priority pathways and sites are those where a complete contaminant migration pathway exists and the upland source is significantly impacting the river or poses a significant and imminent threat to the river based on initial evaluation of key source control prioritization factors (listed on p. 4-3 of the JSCS). A primary consideration is that one or more media (soil, groundwater or stormwater) significantly exceed applicable SLVs at the point of discharge to the river (e.g., water at the end of a discharge pipe or soil or material at the riverbank) or the most reliable and cost-effective data point (e.g., groundwater measured at the shoreline), or where a bioaccumulative chemical is detected at concentrations significantly above the SLV. In addition, if an upland source is violating DEQ narrative water quality criteria for the Willamette River, the site may be considered a high priority. High priority sites are expected to move forward with aggressive source control measures without delay or be subject to enforcement action.
- Medium – Medium priority pathways and sites are those where a complete contaminant migration pathway exists and the upland source is impacting the river or poses a significant and/or imminent threat to the river based on an initial evaluation of key source control prioritization factors (listed on p. 4-3 of the JSCS). A primary consideration is that one or more media exceed applicable SLVs, but not significantly, at the point of discharge to the river, or where a bioaccumulative chemical is detected at concentrations above the SLV. Although exceedance of SLVs does not necessarily indicate that a site poses a significant and/or imminent threat or needs to immediately implement source control measures, it does indicate that the site may pose a threat to human health or the environment and that additional evaluation may be needed to determine if source control measures are required to prevent, minimize or mitigate the migration of hazardous substances to the river. If the site exceeds one or more SLVs, the need for further characterization or for implementation of source control measures will be based on a site-specific weight-of-evidence determination. Medium priority sites are expected to perform a weight-of-evidence evaluation to determine if source control measures are required (see p. 4-5 of the JSCS for more information on the weight-of-evidence evaluation).
- Low – Low priority pathways and sites are those where upland data indicate, based on an initial evaluation of key source control prioritization factors (listed on p. 4-3 JSCS), that the site likely poses a low threat to the river (e.g., concentrations are near or below SLVs) or where DEQ, in consultation with EPA, may issue an upland “No Further Action” (NFA)

determination or lower the State's priority of the site for further upland investigation or remedial action under DEQ's cleanup authority. Source control measures will not be required at low priority sites unless determined necessary by the results of the Portland Harbor RIFS or ROD.

- p High – DEQ's preliminary determination is that this is likely a high priority pathway or site based on available information. A final determination of pathway or site priority will be made upon completion of the SCE.
- p Med – DEQ's preliminary determination is that this is likely a medium priority pathway or site based on available information. A final determination of pathway or site priority will be made upon completion of the SCE.
- p Low – DEQ's preliminary determination is that this is likely a low priority pathway or site based on available information. A final determination of pathway or site priority will be made upon completion of the SCE.

Source Control Decisions and Status of Source Control Measures

The Source Control Decisions (SCDs) and Status of Source Control Measures (SCMs) columns in Table 1 provide information on actions taken or needed to control sources of contamination to the river, including the selected SCMs for each pathway, status of SCM implementation, status of EPA review, and ongoing operation and maintenance requirements.

For many sites listed in Table 1, boxes for information on SCDs and SCMs will be blank because source control work at those sites is still in the evaluation (SCE) phase. Other sites may be in the process of implementing SCMs, and still others may have completed all source control work. For those sites that have completed upland source control and SCMs have been determined to be effective, shading  indicates that work is finished at this point in time. Upon completion of the Portland Harbor in-water RIFS, however, DEQ will reevaluate all source control work to ensure that it adequately controlled contaminants to the final cleanup levels developed for the Harbor.

9.1 Acronyms and abbreviations

Agr	Agreement
AOC	Administrative Order on Consent
AS/SVE	Air sparge/soil vapor extraction – a Source Control Measure used to remove volatile contaminants from groundwater; often combined with treatment measures
AST	Above ground Storage Tank
AWQC	Ambient Water Quality Criteria
BMPs	Best Management Practices
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COI	Contaminant of Interest – chemicals present in Portland Harbor at levels that could threaten human health and the environment
DEQ	Oregon Department of Environmental Quality
ECSI	DEQ's Environmental Cleanup Site Information database

EPA	Environmental Protection Agency
FS	Feasibility Study – a phase of the cleanup process; evaluating cleanup alternatives after the Remedial Investigation has been completed
GW or gw	Groundwater
ICP	Independent Cleanup Pathway
IGA	Inter-Governmental Agreement
IRAM	Interim Remedial Action Measure
HVOCs	Halogenated Volatile Organic Compounds
JSCS	Joint Source Control Strategy – issued by DEQ and EPA in December 2005 ⁸
LNAPL	Low density Non-Aqueous Phase Liquid
N/A	Not Applicable – used in Table 4 to indicate that the particular pathway does not exist at the site
NAPL	Non-Aqueous Phase Liquid
N&E	Nature and extent of the contamination at the site
NFA	No Further Action – a DEQ notice to a Responsible Party declaring that no further cleanup action is needed at the site
OF	Outfall
p&t	Pump & Treat system – a Source Control Measure used to remove or contain and treat contaminated groundwater
PA	Preliminary Assessment – an early assessment stage of the cleanup process
PCB	Polychlorinated Biphenyls
PH	Portland Harbor
PH Agr	Portland Harbor Agreement – a formal agreement to conduct the remedial investigation and source control work
PH Ltr Agr	Portland Harbor Letter Agreement – an initial agreement to conduct limited investigation and cleanup activities and cover DEQ’s oversight costs
PM	DEQ Project Manager leading cleanup work at the site
PPA	Prospective Purchaser Agreement – a tool for negotiating and agreeing upon potential liability for prospective purchasers of sites
PRP	Potentially Responsible Party
RD/RA	Remedial Design/Remedial Action – a phase of the cleanup process that occurs after the Record of Decision; designing and implementing the cleanup action
RI	Remedial Investigation – a phase of the cleanup process; investigating the nature and extent of contamination and understanding the potential risks posed by the contaminants to human health and the environment
RI/FS	Remedial Investigation/Feasibility Study
RP	Responsible Party
SC	Source Control
SCD	Source Control Decision
SCE	Source Control Evaluation
SCM	Source Control Measure
SLV	Screening Level Value – a contaminant-specific level established in the JSCS (see JSCS Table 3.1) that is used to screen upland pathways and sites to identify potential threats to human health and the environment.

⁸ The JSCS is available on DEQ’s web site at (<http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/index.htm>); click “Joint Source Control Strategy” on the left side bar.

SOW	Scope of Work
SVE	Soil Vapor Extraction – a Source Control Measure used to remove volatile contaminants from subsurface soils; often combined with soil vapor treatment
TCA	Trichloroethane
UIC	Underground Injection Control system
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VOCs	Volatile Organic Compounds
WO	Waiting on
XPA	Expanded Preliminary Assessment – an early assessment stage of the cleanup process

9.2 Contact information for DEQ Project Managers

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